DOCUMENT RESUME

ED 429 272 CS 013 520

AUTHOR Meisels, Samuel J.

TITLE Assessing Readiness.
INSTITUTION Center for the Improvement of Early Reading Achievement, Ann Arbor.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO CIERA-R-3-002
PUB DATE 1998-11-01
NOTE 37p.
CONTRACT R305R70004
AVAILABLE FROM CIERA/University of Michigan, 610 E. University Ave., 1600 SEB, Ann Arbor, MI 48109-1259; Web site: http://www.ciera.org
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Definitions; *Learning Readiness; Primary Education; *Reading Achievement; *Reading Readiness; *School Readiness

ABSTRACT

In response to the first of the National Education Goals (1991), which reads, "all children in America will start school ready to learn," this paper addresses four interpretations of the term "readiness" and the methods that have been devised to assess children's learning at the outset of formal schooling. The idealist or nativist view claims that children's proficiency in school is a function of the child's maturation. The empiricist or environmental view sees readiness in terms of proficiency with a specific set of skills. The social constructivist perspective describes readiness as a function of the meanings and values assigned by an individual school community. Each of these views presents dilemmas for young children's learning and teachers' instruction. The paper identifies a fourth view--the interactionist--as a means for resolving these dilemmas. This perspective attends both to what children know and to the capacity of schools to adapt experiences for children who demonstrate different strengths and needs. The instructional tasks that emerge are grounded in a comprehensive assessment of the child's skills, knowledge, behaviors, and accomplishments. Contains 84 references and 3 tables and a figure of data. (RS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 429 272

Assessing Readiness

Samuel J. Meisels
University of Michigan

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

CIERA REPORT #3-002
November 1, 1998

BEST COPY AVAILABLE

CIERA
Center for the Improvement of Early Reading Achievement

CS 013 520

Assessing Readiness

CIERA REPORT #3-002

Samuel J. Meisels
University of Michigan

CIERA Inquiry 3: Policy and Profession
How do state language arts standards influence the way teachers teach and, ultimately, what and how children learn? How does the content and structure of a state's standards influence those efforts?

In response to the first of the National Education Goals (1991), which reads, "all children in America will start school ready to learn," Meisels addresses four interpretations of the term "readiness" and the methods that have been devised to assess children's learning at the outset of formal schooling.

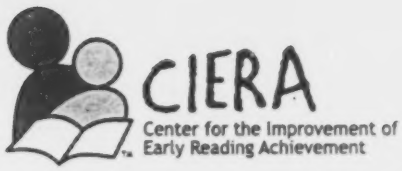
The idealist or nativist view claims that children's proficiency in school is a function of the child's maturation. The empiricist or environmental view sees readiness in terms of proficiency with a specific set of skills. The social constructivist perspective describes readiness as a function of the meanings and values assigned by an individual school community. Each of these views presents dilemmas for young children's learning and teachers' instruction.

Meisels identifies a fourth view—the interactionist—as a means for resolving these dilemmas. This perspective attends both to what children know and to the capacity of schools to adapt experiences for children who demonstrate different strengths and needs. The instructional tasks that emerge are grounded in a comprehensive assessment of the child's skills, knowledge, behaviors, and accomplishments.

CIERA

Center for the Improvement of Early Reading Achievement
University of Michigan – Ann Arbor

November 1, 1998



University of Michigan School of Education

610 E University Av, Rm 1600 SEB
Ann Arbor, MI 48109-1259

734.647.6940 voice
734.763.1229 fax
ciera@umich.edu

www.ciera.org

Chapter forthcoming in Pianta, R. C., & Cox, M. M. *The transition to kindergarten*. Baltimore, MD: Paul H. Brookes.

©1998 Center for the Improvement of Early Reading Achievement.

The work reported herein was supported under the Educational Research and Development Centers Program, PR/Award Number R305R70004, as administered by the Office of Educational Research and Improvement, U.S. Department of Education. However, the comments do not necessarily represent the positions or policies of the National Institute of Student Achievement, Curriculum, and Assessment or the National Institute on Early Childhood Development, or the U.S. Department of Education, and you should not assume endorsement by the Federal Government.

Assessing Readiness

Samuel J. Meisels
University of Michigan

In the fall of 1989, President Bush and the governors of the 50 states met in Charlottesville, Virginia, for the first Education Summit held since nearly the beginning of the century. Out of this meeting came a renewed federal commitment to improving educational achievement and increasing the nation's commitment to students, teachers, and schools. It was also the occasion for establishing six "National Education Goals." First among these goals was the following: "All children in America will start school ready to learn" (National Education Goals Panel, 1991).

In subsequent years and through a new presidential administration, the language of this goal was changed slightly, but the message remained constant. How young children begin school is a major national issue. Specifically, it is an objective of this nation that young children are ready to learn when they begin school.

For the past decade this simple declarative sentence—all children will start school ready to learn—has been the source of numerous meetings, conferences, papers, dissertations, studies, and policies. The National Education Goals Panel appointed a Resource Group and two Technical Review Panels to clarify the meaning of this deceptively simple sounding statement. Many states held "Goal 1 Conferences" to report on their progress in meeting the Goal and to garner support for activities intended to improve young children's school readiness. Papers and dissertations concerning various aspects of readiness were written (Browning, 1997; Nelson, 1997; Graue, 1992, 1993; Kagan, 1990; Lopez & Hochberg, 1993; Meisels, 1992a; Phillips, 1992; Willer & Bredekamp, 1990). The "Readiness Goal," as it came to be known, was even credited with providing an overall framework and incentive to the National Center for Education Statistics as it began planning an Early Childhood Longitudinal Study to follow more than 24,000 children from kindergarten through fifth grade beginning in fall 1998.

Ernest Boyer, the former President of the Carnegie Foundation for the Advancement of Teaching, and the first chair of the Goal 1 Resource Group, described the improvement of the nation's children's readiness as an "epochal task" (Boyer, 1991, p. 125). He claimed that readiness was "a cause around which everyone can rally. For the first time in our history the President and governors from all 50 states have defined a goal of transcendent

national importance, one concerned not just with the equality of schools but, in the larger sense, with the future of the nation" (ibid.).

This report addresses several key issues regarding transition to kindergarten and readiness for school. It begins with a discussion of the Readiness Goal, in order to try to clarify why Boyer and others would associate such high stakes with its realization. Next, the report turns to the task of defining readiness. Since the Charlottesville Summit researchers, practitioners, and policymakers have stumbled over the definition of this seemingly simple term. Four competing definitions are presented, followed by four approaches to assessing readiness consistent with the preceding definitions. Finally, the chapter suggests three aphorisms that have the potential for clarifying the task of assessing readiness in early childhood.

The Readiness Goal

In the four or five years leading up to the Charlottesville Summit, attention was increasingly focused on young children's early school experiences. In particular, concern among professionals was increasing about the use of readiness tests and other assessments to label, track, and sometimes retain children in kindergarten. Following the release of the *Nation At Risk* report in 1983 (National Commission on Excellence in Education, 1983), efforts to raise standards and to make school curricula more challenging swept the country. One unintended outcome of this activity was an escalation of academic demands at the outset of schooling. Described as "academic trickle down" or as the "push down curriculum" (Bredekamp & Shepard, 1989; Shepard & Smith, 1986), the expectations and even the curricular materials of the later grades began to infiltrate kindergartens. Some observers described the kindergartens that were affected by these changes as "boot camps" in which "students are inducted and instructed in a narrow academic curriculum to prepare them for the demands of first grade and future schooling" (Ellwein, Walsh, Eads, & Miller, 1991, p. 159). Many local school districts and state departments of education decided that children should be tested at school entry to determine their readiness for kindergarten (Meisels, 1987; 1989). Large numbers of children who failed these tests were placed in extra-year pre-kindergarten programs, retained in kindergarten for another year, or asked to stay home from school until they were a year older and a lot more "mature."

Before long early childhood professionals began to become alarmed about these practices. Condemnatory reports were issued by the National Association for the Education of Young Children (NAEYC, 1988; 1990), the National Association of Elementary School Principals (1990), the National Association of Early Childhood Specialists in State Departments of Education (1987), the National Association of State Boards of Education (1988; 1991), and the National Commission on Children (1992). The principal message of these reports was that the methods, materials, and logic of educating older students should not be imposed on young children. The policies that were criticized were those that increased attention to academic outcomes at the expense of children's exploration, discovery, and play; methods that focused

on large group activities and completion of one-dimensional worksheets and workbooks in place of actual engagement with concrete objects and naturally occurring experiences of the world; and directives that emphasized the use of group-administered, computer-scored, multiple-choice achievement tests in order to determine a child's starting place in school rather than assessments that rely on active child engagement, teacher judgment, and clinical opinion. By 1989, when the first Education Summit was held, the early childhood community was poised to take steps to clarify how young children should be treated when they begin school by respecting the dynamic of children's development.

Unfortunately, as beginning school policies became increasingly politicized, instead of clarity, confusion and mistrust arose. Politicians sitting on the National Education Goals Panel asked the Resource Panel and Technical Planning Group members why they could not just define "readiness" in simple terms that they and their constituents could understand. It seemed to them not a very difficult task. But for many in the field, defining readiness was and remains a problem. Pianta and Walsh (1996), noting the wide variability between different children's abilities, state that the concept of readiness is "useless" (p. 33). The Goal 1 Technical Planning Group did not go this far, but in a report focusing on early childhood development and learning that was subtitled "Toward Common Views and Vocabulary" it noted that their report would assiduously avoid use of the term "readiness," "a word that often implies a single dimension and single standard of development and learning. To the contrary, because individual child performance is multidimensional, highly variable across the dimensions, episodic, and culturally and contextually influenced, the establishment of any single 'readiness' threshold is misleading and dangerous" (Kagan, Moore, & Bredekamp, 1995, p. 6).

Not all aspects of the Readiness Goal were controversial. Three objectives were attached to Goal 1, and little dispute surfaced about them. They are as follows:

- All disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs to help them prepare for school.
- Every parent in America will be a child's first teacher and will devote time each day to helping his or her preschool child learn; parents will have access to the training and support they need to accomplish this.
- Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low birthweight babies will be significantly reduced through enhanced prenatal health systems. (US Department of Education, 1991, p. 61).

Uncontroversial as these statements are, relatively few new federal resources have been earmarked for programs intended to achieve these critical objectives. The relationship between these objectives and the overall school readiness goal is also unclear. If these objectives were achieved, would all children enter school ready to learn? Are these objectives correlates of readiness? Are they precursors? In some respects these objectives may hold the key to assuring a successful transition to school for many children, but they were never the subject of any explicit focus or program activity.

The main activity surrounded the goal statement itself, not the subsidiary objectives. Goal 1 seemed to arouse fears among many individuals close to policy and practice in early childhood. Some pointed out that all children are ready to learn from birth. They need not wait until they are five years of age to be "ready to learn" (Meisels, 1995). Others pointed out that the goal ignores individual differences in learning. It will never be the case that all children will attain the same level of performance at a single culturally defined point in time. Individual differences and variations in development associated with both endogenous and exogenous factors make a mockery of our chronological benchmarks when we try to apply them across the board to all children (Pianta & Walsh, 1996). Moreover, the term "readiness" is conceptually confusing. Is "readiness" something we wait for? Is it something we impose? Is it a within-the-child phenomenon or something outside the child (Meisels, 1996)? Finally, the simplistic or mechanistic interpretation of readiness that can be derived from the goal contains within it the potential for encouraging policies harmful to young children. In an educational world that is oriented toward efficiency and accountability, it is easy to imagine that someone will be penalized if we reach the year 2000 and find that some children are not ready for school. Often, the least advantaged in our society are blamed when public policies intended to assist them go wrong.

Schorr (1997, p. 39) encapsulated many of these concerns about readiness in a series of questions that focus on one of the main issues provoked by the first goal—how will we assess readiness? She asks:

1. Can children's school readiness be assessed without doing them harm?
2. Can readiness assessment avoid labeling or stigmatizing children?
3. Will preschool programs become distorted if they "teach to the test"?
4. Is it possible for readiness testing to recognize the unique character of early development and learning?
5. If large numbers of children are not ready for school, will this be viewed as a problem in the child or within the community?

These questions are extremely important. Not only do they raise issues that are central to implementing the Readiness Goal, they also remind us of the problems of inappropriate testing of young children that were prevalent in the years leading up to the Education Summit. Remembering Skinner's (1968) axiom that "what is taught often tends to be simply what can be measured by tests and examinations" (p. 235), many early childhood observers feared that a focus on assessing readiness would influence the structure of the early childhood programs that would be devised to implement the Goal.

The balance of this paper addresses these fears and these questions. First, competing definitions of readiness are presented. Then, the assessment implications of these definitions are explored. These implications are followed by a discussion and conclusions.

Definitions of Readiness

Readiness has a substantial history in modern education. Cuban (1992) reports that teachers in Progressive schools in the early part of the twentieth century saw the acquisition of information about a child's readiness as very important to their practice. Much like today, they viewed testing as a means of determining a child's preparedness for school and as a way to stratify children into various ability groupings. Cuban reports that:

> By 1919, for just kindergarten and primary grades, there were already 84 standardized tests. Intelligence testing in kindergarten for placement in groups there and in the first grade was enhanced by the invention of readiness tests that aimed at sorting those five-year-olds that could make the transition to the first grade from those who could not. The creation of subprimary classes . . . became common ways that Progressive educators managed those five-year-olds who were unready for the first grade. By the end of the 1920s, any elementary school that considered itself modern invested staff time and money in testing and ability grouping in kindergarten and first grade. (Cuban, 1992, p. 188)

Over time, views of testing and readiness waxed and waned, but the idea that assessment data could be used to help teachers be more effective remained relatively constant. As educational psychology became more dominant in the 1950s and 1960s, more emphasis was placed on the hierarchical structure of knowledge. Tyler (1964) noted that readiness to learn is derived from analyzing the knowledge and skills required by new cognitive activities. "Once these components are known, they can be arranged in a hierarchy that proceeds from lower to higher levels of knowledge" (p. 238). Bruner's (1966) view was similar, though with a twist. He pointed out that the idea of readiness is a "mischievous half-truth . . . largely because it turns out that one *teaches* readiness or provides opportunities for its nurture, one does not simply wait for it" (p. 29). In other words, a child who is ready to learn something will not learn unless he is taught it or unless the conditions are propitious for the child to learn it on his or her own. Readiness is not an end in itself; it is the beginning of an active teaching and learning engagement. Waiting for children to demonstrate their readiness by learning something spontaneously without some intervention or preparation of the environment is, in his view, fruitless.

Bruner's perspective casts light on the fundamental relativity that is inherent in readiness. If readiness consists of a mastery of simpler skills that permit one to reach higher or more complex skills, one child's readiness may be another child's long-ago-accomplishment or another child's yet-to-be-achieved success. Whenever we define readiness in terms of a specific level of accomplishment, we are omitting children from this definition who have not had similar life experiences or opportunities for learning. This relativity has posed major difficulties in reaching consensus on a definition of readiness.

Teachers' Definitions

Early in the Goal's process, the Carnegie Foundation for the Advancement of Teaching surveyed more than 20,000 teachers in all 50 states regarding their perspectives about the readiness of the nation's children. This survey, which was distributed in August 1991, was completed by fewer than 35% of the potential respondents (N = 7,141). Because of this low rate of response, its findings are highly questionable. One of the central findings, which Boyer calls "troubling, ominous really" (Boyer, 1991, p. 7) is that the respondents claimed that 35% of the nation's children are not ready for school. Compared to children enrolled five years ago, 42% of the teachers said that the situation is getting worse; only 25% said that things are getting better.

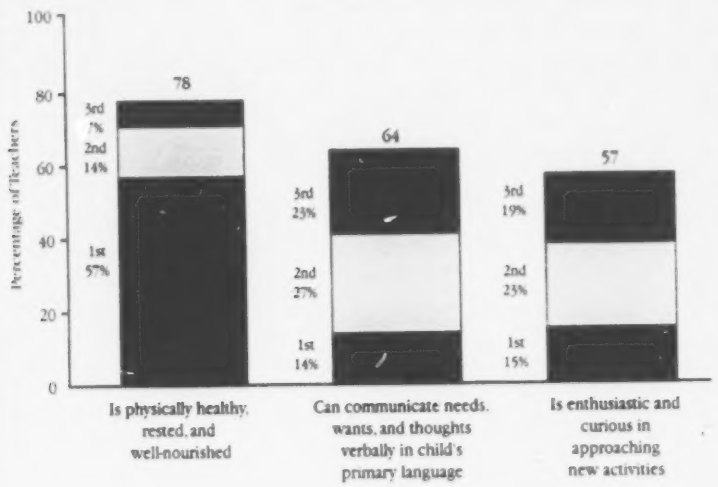
Methodologically, not only did the return rate of this major policymaking study threaten its validity, but the way in which the survey questions were phrased raises significant concerns. Specifically, the survey does not recognize the fundamental relativity that is at the heart of readiness. Teachers were asked to give the percentage of students who were not ready to participate successfully in kindergarten. But no definition of "participate successfully" was provided, and no way of knowing the differences between kindergartens across the nation was available. Similarly, teachers were asked to respond to questions about "How serious a problem was language richness [or emotional maturity, or general knowledge, or social confidence, or moral awareness, or physical well-being] for those students who entered school not ready to learn?" These items beg the question of the meaning of "ready to learn" and also assume a common perspective about emotional maturity, social confidence, moral awareness, and so forth. Data such as these add little to our knowledge about school readiness.

In an attempt to obtain a better understanding of teachers' views about readiness, the Goal 1 Technical Planning Group designed a survey that was administered by the National Center for Education Statistics (NCES) in February 1993 (NCES, 1993). Known as a "Fast Response Survey," it was sent to 1,448 kindergarten teachers. The sample was selected from NCES's Common Core Data School Universe file, which contains information on 85,000 public schools, about half of which have kindergarten classes. The schools were selected based on school size, percentage of students eligible for free and reduced lunch, and percentage of minority students. Data collection was completed by April 1993 with a return rate of 95%. The principal subscales included in this brief survey were public school kindergarten teachers' judgments and beliefs about school readiness (alpha = .632), teachers' judgments about the qualities of school readiness (alpha = .883), and information about teachers' practices in kindergarten (alpha = .524). Background characteristics of the teachers were also surveyed.

Rather than asking teachers to assume a common definition of readiness, this survey sought to construct their views of readiness from a series of questions that explored their opinions about early childhood education. For example, when asked to state how important each of 15 qualities was for a child to be ready for kindergarten, teachers indicated that the following characteristics were essential: a child should be physically healthy, rested, and well-nourished; able to communicate needs, wants, and thoughts verbally; and enthusiastic and curious in approaching new activities (NCES,

1993, p. 3). Figure 1 displays the ranked percentages of teachers' ratings of these qualities.

Figure 1: Percentage of Public School Kindergarten Teachers Rating Qualities as 1st, 2nd, and 3rd Most Important for a Child to be Ready for School



Source: Fast Response Survey System, Kindergarten Teacher Survey on Student Relations, FRSS 46, U.S. Department of Education, National Center for Education Statistics, 1993.

The characteristics considered least important by the respondents were good problem-solving skills (only 24% selected this as most important), ability to identify primary colors and basic shapes (24%), ability to use pencils and paint brushes (21%), knowledge of the alphabet (10%), and ability to count to 20 (7%) (NCES, 1993, p. 4). Strikingly, these responses run counter to conventional opinions of typical readiness characteristics. For example, Powell (1995) reports that readiness for school typically embraces "a specific and often narrow set of cognitive and language skills, usually assessed by determining whether children can master such tasks as identifying four colors by name, copying a square, and repeating a series of four or five numbers without assistance" (p. 15). But the teachers in this national sample did not value these indicators as highly as the more social characteristics noted in Figure 1.

Other items in the survey showed a similar lack of emphasis on conventional markers of readiness. Table 1 contains eight statements that had the highest and lowest agreement of the respondents with various views of readiness. Using a five-point scale ranging from "strongly disagree" (1) to "strongly agree" (5), teachers were asked to indicate their concordance with a list of 17 statements. The means for these statements (see Nelson, 1997, for calculations of means) show a high value on interaction with children and a low emphasis on more typically academic concerns (i.e., homework, matching letters and sounds, drill and practice). However, the statements with the highest agreements also reveal a significant ambiguity among the teachers

BEST COPY AVAILABLE

who were included in this sample. They embraced both an active learning position ("I can enhance children's readiness by providing experiences they need to build important skills") and a more passive approach ("Readiness comes as children grow and mature; you can't push it"). These contradictory outlooks or ideologies about teaching and learning may relate to whether the referent of the item is academic or social. For example, most teachers expressed a greater concern with a child's ability to take turns and share (64% indicated that this was a strong emphasis of theirs) than with teaching children to read (44% agreed with the statement that kindergarten children should not be given reading instruction unless they show an interest). In short, readiness among these teachers seems to relate more to social indicators than to academic concerns, although among schools with high levels of poverty and with teachers who are African-American there was a higher value on academic outcomes and marginally lower emphasis on social indicators. Nevertheless, only about a quarter of the teachers (27%) believe that by the end of the kindergarten year all children will be ready to move on to first grade. Given this conclusion, it is critical that we arrive at a clear conception of what readiness is and how to assess it, so that children who need early intervention receive it and all children have better opportunities for success.

Table 1: Means of High and Low Items on Teachers' Views of Readiness Scale*

Item	Mean	Standard Deviation
Parents should read to their children ... play counting games regularly.	4.9	.4
One of the best ways to help child... learn to read is by reading to them.	4.8	.5
I can enhance children's readiness by providing experiences they need to build important skills.	4.6	.7
Readiness comes as children grow and mature; you can't push it.	4.4	.9
I assume that by the end of the kindergarten year all children will be ready for first grade.	2.5	1.2
Most children should learn to read in kindergarten.	2.3	1.1
The best way to learn how to read is to practice matching letters and sounds over and over.	2.1	1.1
Homework should be given in kindergarten almost every day.	2.1	1.3

* Source: Fast Response Survey System, Kindergarten Teacher Survey on Student Readiness, FRSS 46, U.S. Department of Education, National Center for Education Statistics, 1993 and Nelson, 1997.

In short, despite the high return rate and the excellent quality of the NCES survey, a common definition of readiness remains elusive. Indeed, four conceptions of readiness have been advanced in the literature: idealist/nativist, empiricist/environmental, social constructivist, and interactionist. A discussion of these varied approaches may bring some clarity to the issues surrounding readiness.

Idealist/Nativist

One common view of readiness holds that children are ready to start school when they reach a level of maturity that enables them to sit quietly, focus on work, engage with their peers in socially acceptable ways, and accept direc-

tion from adults. Development is only marginally influenced by external forces; endogenous factors control behavior and learning, which are closely linked. This view is often ascribed to adherents of Arnold Gesell's maturational philosophy (see Ilg & Ames, 1972). It can be characterized in a number of different ways. It is an "idealist" philosophy in the sense that it conceptualizes development in highly abstract terms; it is almost Platonic it its view of how growth occurs. Rather than focus on the impact of such external elements as parental nurturance, the economic environment, educational inputs, or other social factors, this perspective privileges the internal dynamics of the child and consigns exogenous factors to the background. This view does not deny the power of the environment to alter a child's life, but it asserts the primacy of the ideal aspects of development over all other elements in order to make the latter subject to the control of the former. The true meaning of development, therefore, lies in the ideal sphere of inner development, rather than the phenomenal areas of external activity.

Described as a "Romantic" view by Kohlberg and Mayer (1972), this perspective posits an internal "clock" within the child that continues to advance despite the activity that surrounds it. Educators' roles are to nurture the child's natural unfolding, much as Plato metaphorically described the task of the educator to be that of tending a garden in order to bring to fruition the seeds that are planted there. Smith and Shepard's (1988) term for this approach to early learning and development is "nativism." They note that nativism holds that "nearly all functions of the organism, including the mental ones such as perception, are innate rather than acquired through the senses" (p. 332). School readiness can thus be defined as the task of allowing the psychological forces underlying learning to unfold so that physiological and constitutional structures can eventually emerge.

In short, the idealist/nativist perspective on readiness holds that children are ready to learn when they are ready. We can do little to accelerate this process. Rather, as a result of an internal, organismic process that is independent of environmental manipulation children will eventually be able to concentrate in school, focus on activities that are novel, relate appropriately to adults and peers, and gain satisfaction from being part of a community of students.

Empiricist/Environmental

In contrast to the idealist view, an empiricist conception of readiness defines readiness entirely in terms of the practical characteristics of the child's behaviors. Instead of a "mentalist" perspective of an unfolding, endogenous learner, the empiricist or materialist view focuses on the external evidence of learning. Readiness in this Lockean picture is commensurate with knowing colors, shapes, one's address, how to spell one's name, identify one object although it is similar to another that is embedded in an array of dissimilar objects, count to 10, say the letters of the alphabet, and behave in a polite and socially expected manner. Instead of focusing on the mental structure of the child, this approach concentrates on what the child can do and how the child behaves.

Also known as a "cultural transmission" (Kohlberg & Mayer, 1972) or "environmentalist" model (Smith & Shepard, 1988), this view reflects an externally driven approach to development. In it the child's development is assumed to be controlled nearly totally by events and conditions that dominate his or her social and cultural world. School readiness is characterized by a cumulative skills model that posits a hierarchy of tasks culminating in a final task, and in which intermediate tasks cannot be mastered before earlier goals are achieved (Gagne, 1970).

Kagan (1990) calls this approach "readiness for school" as contrasted to "readiness for learning." She points out that this view emphasizes specific skills or experiences that are valued as the precursors to successful school experience, rather than as ends in themselves. Children acquire these skills and information through external guidance or teaching. Those who cannot demonstrate these skills are not ready for school and may need special assistance or enrollment in such extra-year programs as "Developmental Kindergartens" or "Young 5s" programs. (This is the solution of choice for unready children in the idealist/nativist perspective as well.) Fundamental to this view is the belief that readiness is an absolute state of affairs (see Meisels, 1996)—an end point that children and teachers can strive for—and that the criteria for readiness are stable and universal.

Social Constructivist

A different approach emerges from the perspective that takes seriously the basic relativity that characterizes readiness among young children. This view rejects the notion that readiness is something within the child (idealism) or something absolute and external to the child against which the child must be evaluated (empiricism). Rather, this perspective sees readiness in social and cultural terms. Readiness is "a set of ideas or meanings constructed by people in communities, families, and schools as they participate in the kindergarten experience. These ideas come out of community values and expectations and are related to individual children in terms of attributes like their age, sex, and preschool experience" (Graue, 1992, p. 226).

This view shifts the focus of assessment away from the child to the community in which the child is living. Specifically, perceptions of teachers, parents, and others regarding a child's readiness become the foreground for this discussion. Love (1995) notes that "Developmental status by itself does not determine readiness because the skills and abilities necessary for school success may vary substantially from one school to another, or even from one classroom to another within a school. For a given set of school expectations, there can even be considerable variation in the *specific* skills and abilities that lead to successful school performance" (Love, 1995, p. 1). Because of these factors, the typical readiness definition provides little or no guidance about how to resolve differences that are found among communities, schools, or even classrooms.

In a study of three teachers in three very different schools, Graue (1993) found that readiness was most accurately defined in terms of community and contextual demands, rather than absolute characteristics of children. Smith and Shepard (1988) also found a wide range of opinions about readi-

ness without having to leave a single school district. In their study of six schools located in the same school district, they discovered that teachers' beliefs about readiness varied substantially and could be described and ordered along a dimension of nativism. These opinions were influenced by local views of school readiness that spring from the particular values, expectations, and socioeconomic mix of the school, as well as teachers' prior dispositions, training, and personal experiences.

In other words, a social constructivist perspective on readiness abjures absolute definitions and looks to the setting for its definition of readiness. A child who may be ready in one community or even in one school in the same community may not be ready in another school or community. Readiness is in the eye of the beholder.

Interactionist

The final perspective on readiness can be described as interactionist. It incorporates information about the child as well as information about the milieu in which the child is reared and is taught. In this view, readiness is a *bi-directional* concept. It focuses on children's learning and on schools' capacities to meet the individual needs of their students. Stated formally,

> Readiness and early school achievement are bi-directional concepts that focus both on children's current skills, knowledge, and abilities and on the conditions of the environment in which children are reared and taught. Because different children are prepared for different experiences, and different children respond differentially to apparently similar environmental inputs, readiness is a relative term. Although it can be applied to individual children, it is not something in the child, and it is not something in the curriculum. It is a product of the interaction between children's prior experiences, their genetic endowment, their maturational status, and the whole range of environmental and cultural experiences that they encounter. (Meisels, 1996, p. 409)

This is a comprehensive view of readiness. With a dual focus on the child and the environment in which the child is being taught, it integrates an emphasis on child development with a recognition that the perceptions of the individuals in the child's environment shape the content of what is taught, learned, and valued. In this view, the interaction relates to how the child's activity alters the expectations of the environment even as the environment modifies what the child is able to accomplish. Stated differently, this perspective addresses both the child's contributions to schooling and the school's contribution to the child. Kagan (1990) calls this "readiness for learning" in contrast to "readiness for school." It is directed towards future possibilities, rather than past deficiencies. It is based on a commitment to helping all children become learners, and it suggests that educational success depends on the emergence of a reciprocal relationship between school and child, with this relationship mentored by the child's teacher.

The interactional view of readiness reformulates apparent opposites so that they coexist instead of conflict. For example, children's skills are not considered to be solely inborn nor primarily externally contingent; rather, they

reflect joint contributions of inheritance and experience. Similarly, educational interventions are not viewed as strictly individualistic (created in response to a child's unique set of skills, experiences, accomplishments, or needs), nor as "one size fits all." Instead, the interactionist view assumes a set of clear and explicit standards that admit a range of continua in their realization. Teachers apply these standards through documenting children's performance in school, evaluating that performance in relationship to external standards, formulating plans for working with children based on this information, and then repeating the process of documentation and evaluation over time based on cumulative experiences. In this manner, the central axes in the readiness equation—the child and the educational environment—are mutually altered and transformed.

Approaches to Assessment

These four characterizations of the readiness construct are essential for understanding what we mean by readiness. Similarly, a definition of the readiness construct is necessary in order to take the next step of determining how to assess young children's readiness—that is, how to evaluate their status at the outset of school. Conventionally, readiness has been assessed by tests that are variations of achievement tests. The principal difference between readiness tests and achievement tests is temporal: Readiness tests are administered at the outset of the school year; achievement tests are usually given at the end. The content of the two types of tests is related in that readiness tests more or less reflect earlier versions of skills that are assessed by achievement tests at more advanced levels later. Fundamentally, readiness tests depict a child's relative preparedness to take advantage of a specific program or curriculum by describing the child's current level of skill achievement or pre-academic preparedness.

Following the 1989 Education Summit, the problem of determining how to assess readiness moved to center stage among policymakers. If the nation was indeed to have confidence that "all children will enter school ready to learn," some form of assessment of readiness must be possible for purposes of accountability. Different constructs of readiness call for different approaches to assessment. Four different models of assessment are given below, corresponding to the four definitions presented earlier.

Idealist/Nativist

This theoretical conception sees readiness as a within-the-child phenomenon. Whether or not a child is ready for school is a function of maturational processes inherent in the child that eventually enable the child to perform adequately in school. The chief exponent of this view is Arnold Gesell and his followers (see Gesell & Amatruda, 1941; Ilg & Ames, 1972), although this view is also part of the widely held "common wisdom" about childhood development upon which many parents, professionals, and policymakers rely (see Barth & Mitchell, 1992). The Gesell perspective views development

as occurring in predictable stages that are regulated by forces internal to the child. Environmental inputs have little impact on this natural unfolding. However, since development takes place according to prescribed stages, it is possible to measure relative progress of children as they move through these stages by means of specialized assessments.

The use of the Gesell School Readiness Test (Haines, Ames, & Gillespie, 1980) to determine whether a child should enter kindergarten, stay at home (thus enjoying a "gift of time"), or be placed in an extra-year program ("developmental kindergarten"), became a *cause celebre* among early childhood educators in the late 1980s and early 1990s. Estimates of the frequency of use of the Gesell in early childhood programs were very high (see Graue & Shepard, 1989), and growing numbers of children were held back at the outset of school because of their performance on this test (see Meisels, 1987; 1989; 1992a). The situation became so charged that some states began to raise the required minimum age of entry for kindergarten to account for the "unreadiness" that was being uncovered among their state's population (Meisels, 1992a). National talk shows and network news magazines began to feature programs in which children and parents testified about the negative impact of testing children at the outset of school. In some states, such as Michigan, the Attorney General was even called upon to affirm that children be allowed to enroll in kindergarten "despite the recommendation of school district personnel that [they] attend an alternative 'Early 5' or 'Developmental Kindergarten' program" (State of Michigan, 1987, p. 1).

At issue was both the construct being assessed and the assessment itself. Maturational theory was an outgrowth of the 1920s and 1930s when the study of child development was truly in its infancy. The assessment that began to enjoy great popularity in the mid-1980s was derived from work that Gesell had done more than a half-century before, although little cumulative empirical research was available to establish its accuracy or stability. Over the years maturational theory was surpassed by more complex and more thoroughly researched theories that were at odds with both the premises and conclusions of this view (Fischer & Silvern, 1985; White, 1996).

Within a short time, many scholars began to report studies demonstrating the problems of misclassification attributable to the Gesell (see Graue & Shepard, 1989, and Meisels, 1989, for reviews of these studies). An example of the kind of problems encountered in the research literature can be seen in a study intended to defend the validity of the Gesell (Walker, 1992). This investigation used a multi-trait, multi-method approach to show the relationship between 4-6 year old children's scores on the Gesell Developmental Assessment (GDA; a version of the Gesell School Readiness Test) and a variety of outcome measures at age 8 1/2. However, the study showed that children's average performance on the GDA fell below chronological age expectations. The discrepancy ranged from 2 months at age 4 to nearly 7 months by age 6.

Findings of such magnitude and consistency would normally suggest that the GDA is in need of recalibration, since in a representative sample it is unlikely that so many of the children would be delayed (see Meisels, 1992b from which this argument is derived). However, Walker concludes that the problem lies within the children rather than the test. Lichtenstein (1990) reported similar findings for the full Gesell School Readiness Screening Test (GSRST), of which the GDA is a prominent element. But unlike Walker, he

interpreted the greater than 50% discrepancy between "developmental" and chronological age as evidence of the GSRST's miscalibration.

In Walker's study, it could be objected that the GDA's unexpected relationship to chronological age is vindicated by its correlations with follow-up assessments. Such correlations, if high enough, would indeed place the onus on the children rather than the assessment. But before this conclusion can be drawn, two others must be established. First, it must be shown that the correlations that were obtained were not influenced by teachers' prior knowledge or exposure. Lichtenstein (1990) demonstrated that teachers' "tendency to perceive children as unready is directly proportional to the extent of Gesell Institute training received" (p. 371). In other words, low scores on the GDA may have set up an expectancy among the children's teachers concerning the children's performance. Only a completely "blind" trial, in which the Gesell findings were concealed from the preschool and follow-up teachers and/or examiners and these examiners were uninformed about Gesell teachings and practice, could eliminate this powerful source of potential bias. However, the examiners in Walker's study were not all blind to the children's previous results and they were all trained in Gesell ideology and practice.

Second, given that bias is controlled, it must be demonstrated that the preschool indicator, the GDA, is highly predictive of the classifications obtained on the 8-year-old measures. Walker's study shows that in the vast majority of cases children changed classifications in the follow-up assessment. Indeed, on three of the four outcome measures, the preschool ratings were lower than the average performance across all quartiles (in one area, reading, the prediction was identical to the outcome). Thus, it appears that the GDA's underestimation of children's abilities—actually, a reverse "Lake Wobegon effect" (Koretz, 1988)—is highlighted by these comparisons. These data, similar to so many other independent studies of the Gesell, do not support its use for assessing readiness. Ironically, through its consistent finding of developmental ratings below chronological age expectancies, the study asks us to believe in the test rather than in the child—a peculiar position indeed for advocates of developmentally appropriate practice.

Empiricist/Environmental

This perspective holds that readiness is something that lies "outside of the child." It consists of several modal skills, behaviors, and personality traits that can be evaluated empirically and that are considered basic precursors to successful school performance in young children. Assessment of such skills has a long history that can be traced to the reading readiness tests of the 1930s and is still alive today. Stallman and Pearson (1990) point out that these tests were intended to measure traits and achievements that were correlated with readiness for first grade instruction. Over the years, the major tests of early school achievement—consisting of the Iowa Tests of Basic Skills, the Comprehensive Tests of Basic Skills, the California Achievement Test, and the Stanford Early School Achievement Test—have not differed significantly from one another in form ("fill in the bubbles and ovals"), psychometrics (they are often validated in a self-referential manner against one another), construct (skills are reduced to decontextualized subparts), and

content (primarily low-level preliteracy and literacy items). Table 2 shows the subtests of these tests. Not only do the tests resemble one another, they are similar to the original reading readiness tests that were formulated more than a half-century ago. Stallman and Pearson point out that these tests assess children "on isolated skills in decontextualized settings rather than on reading tasks in situations in which they are asked to behave like readers" (p. 38). They also focus on recognition skills, not production or even identification. This omits any view of reading as a process of active cognitive construction.

Table 2: Subtests of Kindergarten Achievement Tests*

ITBS (Iowa Tests of Basic Skills)	CTBS (Comprehensive Tests of Basic Skills)	CAT (California Achievement Test)	MAT (Metropolitan Achievement Test)	SESAT (Stanford Early School Achievement Test)
Word analysis	Sound recognition	Word analysis	Reading	Sound recognition
Vocabulary	Vocabulary	Vocabulary	Language	Words
Language	Comprehension	Comprehension	Science	Reading
Listening	Visual recognition	Language expression	Social studies	Letters
Math	Math	Math	Math	Math
				Environment
				Listening

* Source: Meisels, S.J. (1996). Performance in context: Assessing children's achievement at the outset of school. In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 410-431). Chicago: University of Chicago Press, p. 415.

In addition to these early school achievement tests, another exemplar of the empiricist model in assessment is to be found in conventional readiness tests, of which a large number are available. Although tests of early school achievement may be narrow in terms of the domains they cover and the methods they use to obtain information from children (they are primarily group-administered tests that rely exclusively on pencil and paper methods), readiness tests are often individually administered and may sometimes include a variety of responses (e.g., building with blocks, gross motor tasks, drawing, etc.). In this respect, some readiness tests resemble developmental screening tests, which are administered to individual children and include diverse response formats. However, the similarity ends there; the content of these two types of tests is dissimilar, and the use that can be made of the data obtained from the tests is quite discrepant. The purpose of developmental screening for 3-, 4-, and 5-year olds is to assess children briefly in order to identify those who may be at risk for school failure. Criteria for developmental screening instruments are that they be brief, efficient, inexpensive, objectively scored, reliable, valid, culture- and language-fair, and broadly developmental in focus (Meisels & Atkins-Burnett, 1994). In contrast, most readiness tests are criterion-referenced, unstandardized, and lack data concerning reliability and validity. Developmental screening instruments (see Meisels, Marsden, Wiske, & Henderson, 1997, for an example of a well-standardized screening instrument, or Meisels & Atkins-Burnett, 1994, and Meisels & Provence, 1989, for reviews of a variety of screening instruments) serve a critical purpose in early childhood by identifying children who may need special services so that intervention can begin early.

Perhaps the greatest problem with readiness tests is their lack of validity. This problem creates substantial danger of misclassification. One study of

BEST COPY AVAILABLE

four readiness tests found that children who were poor, male, Black, and young in relation to their peers were much more likely to be classified by these tests as unready or at risk. "When kindergarten screening tests are used for placement decisions, one may witness disproportionate placement of such children in special programs. . . . We are concerned that uncritical acceptance and use of these scores may reinforce, if not exacerbate, tendencies to create 'ghetto' junior kindergartens" (Elwein, Walsh, Eads, & Miller, 1991, p. 170). One of the readiness tests used in this study was the Brigance K and 1 Screen (Brigance, 1982). This widely-used test is a brief assessment of young children's language development, motor abilities, number skills, body and social awareness, and auditory and visual discrimination. In the Elwein et al. study it was found to account for only one-fifth of the variance in the quantitative outcome, and 15% of the variation in the prereading subtest of the Metropolitan Readiness Test in first grade; on an assessment of cognitive development, it accounted for less than one-fourth of the variance.

Previous research about the Brigance demonstrated similar results, with one review summarizing its findings by saying that "any school system that uses the Brigance inventories without going through a local validation effort is placing itself at risk legally" (Robinson & Kovacevich, 1984, p. 98). A new technical report has been published for the Brigance Screenings (Glascoe, 1997). Unfortunately, the new data do not provide conclusive evidence concerning the validity of this instrument. The kindergarten sample for this standardization consisted of only 74 children. The criterion measures for the screening were a combination of parent report scales (themselves of questionable validity) and standardized achievement tests. The most critical information for deciding whether a test can be used for classification is the proportion of children correctly identified with a placement instrument (i.e., sensitivity), and the proportion of children without the condition in question who are correctly not identified (specificity). The technical manual produced by the Brigance publisher shows that 25% of the children not at risk academically on the follow-up examinations would be considered to be at-risk, and 23% of those who were at risk would be missed altogether (Glascoe, 1997, p. 102). This "hit rate" is not sufficiently high to justify the use of the Brigance as a test to classify children or to determine their readiness for school.

It is important to know the accuracy of developmental screening and readiness tests because both contain an implicit prediction. That is, they imply that failure on either instrument will lead to difficulties in school. However, no readiness tests have yet been developed that have acceptable predictive validity (in contrast, see Meisels et al., 1997, and Meisels, Henderson, Liaw, Browning, & Ten Have, 1993, for an example of high predictive validity of a developmental screening instrument). Without a reasonable level of accuracy (i.e., sensitivity and specificity at or above .80), the probability is high that there will be false identifications, mistaken placements, and inappropriate classifications. Of all the reasons that explain the lack of long-term accuracy of school readiness tests, none is more compelling than the basic rationale presented earlier. Readiness tests are concerned with determining whether a child has acquired a cluster of curriculum-related skills. Not only do children—especially young children—acquire skills at different rates and in different ways, children are also exquisitely sensitive to opportunity to learn. If a child has not been taught his colors or shapes, or has not been exposed to opportunities to acquire these skills, then that information will

not be available to the child. Frisbie and Andrews (1990) note that because of the limited scope of skills that readiness tests and batteries are able to assess, "the scores should not be expected to make major contributions to many of the decisions educators might want to make about kindergarten pupils. For example, the scores are not valid as indicators of who is or is not ready for kindergarten. The deficiencies represented by low readiness scores may be 'treated' in relatively short order through instruction" (p. 447).

Children arrive at school with a plethora of diverse previous experiences. Readiness tests and the empiricist/environmental rationale that support them assume a common core of learning before school. But this is unjustified. Children who do poorly on readiness tests often do well on similar assessments by the end of their kindergarten year, whereas those who begin at a high level may plateau or even drop in skill achievement as expectations rise (Meisels, 1987). Such variability shows again that the problem is not with the children, but with the tests. The evidence does not support this perspective on assessing children's readiness.

Social Constructivist

This approach assumes that readiness is situationally specific, locally generated, and highly relative (Graue, 1992; 1993). Readiness "cannot be defined without reference to how children's behavior and development are supported and what the children should be ready for" (Love, Aber, & Brooks-Gunn, 1994, p. 2). The social constructivist view recognizes that local communities hold different values, expectations, and norms for their children. Differences in parental wealth, ethnicity, education, and background account for some of these differences. But differences also flow from variations in many other sources (i.e., the teaching staff, school building principals, or policymakers). In short, this perspective holds that in order to understand and assess a child's readiness, it is essential to take into account the context in which the child is reared and the setting in which the child will be educated.

How do we assess readiness under these conditions? Love, Aber, and Brooks-Gunn (1994) suggested establishing a methodology at a community level to provide information about the collective status of children entering kindergarten. Their proposal is not intended for assessing individual children, but for producing community aggregate measures. Their community assessment strategy includes nine requirements, which are shown in Table 3 and are described below.

Their first requirement calls for all key dimensions of the First National Goal to be assessed. These dimensions, which were proposed by the Technical Review Group and ratified by the National Education Goals Panel, include the following domains: 1) physical well-being and motor development; 2) social and emotional development; 3) approaches toward learning; 4) language usage; and 5) cognition and general knowledge (Kagan, Moore, & Bredekamp, 1995). Love, Aber, and Brooks-Gunn suggest 18 indicators of these dimensions that can be used to show the strengths and weaknesses of child development-related outcomes in the community.

Table 3: Requirements for a Community Readiness Assessment Strategy*

1. Assess all key dimensions relevant to the readiness goal
2. Focus on the collective status of entering kindergarteners
3. Rely primarily on existing instruments
4. Incorporate multiple modes of assessment
5. Incorporate multiple perspectives in the assessment
6. Be adaptable to local circumstances
7. Be appropriate for diverse cultural and racial/ethnic groups
8. Balance positive and negative indicators of the readiness dimensions
9. Be ready for implementation

* Source: Love, Aber, & Brooks-Gunn, 1994

Second, they suggest a focus on the collective status of all entering kindergartners. Their purpose is to develop a *community* profile of the status of children and institutions. Hence, only aggregate measures are to be used and a matrix sampling design employed whereby children in the community do not all receive every assessment; only a sample will participate and each member of the sample is administered a portion of the entire assessment from which generalizations can be drawn.

Third, Love and colleagues suggest that the community assessment rely on existing instruments. In order to respond to children's and communities' needs as quickly as possible they chose 22 indicators from several reliable and valid instruments. Their fourth and fifth suggestions are closely related: They encourage the use of multiple modes of assessment and multiple perspectives in assessment. Specifically, they recommend that direct assessments of children's development be supplemented with indirect reports from teachers and parents, observations of children in groups, and surveys of adults in the child's world. Thus, this strategy incorporates the perspectives of a wide range of individuals commenting on a large number of indicators of importance in the life of children and the community.

Sixth, they caution us to be adaptable to local circumstances. Some communities may want a focus on bilingualism, some on enhanced cognition, and some on socially adaptive strategies. The key is that the battery of assessments that is finally selected should reflect the values of a particular community. The seventh recommendation is a correlate of the sixth: Assessments should be appropriate for diverse cultural and racial/ethnic groups. As an example they point out that in some communities neighborhood violence occurs so infrequently that "it makes little sense to track it over time to assess within community change. For other communities, however, the incidence of violence may be relatively high, and its reduction may be key to improving children's school readiness" (Love, Aber, & Brooks-Gunn, 1994, p. 10).

Their final two suggestions are to balance positive and negative indicators of the readiness dimensions and to be ready for implementation. Balance reminds us to focus not just on the problems of a community but on the strengths and resources available as well. One of these strengths is a community's will to engage in this process of assessment as soon as possible, using

the suggested existing measures, in order to help all children become more ready for successful school experiences.

As the authors suggest, the limitations of this overall strategy arise from its strengths. Collected here are a wide range of indicators that provide a profile or general index of the readiness of children in a community. Since the focus is on the readiness of a community's children, specific information needed for parents, educators, or policymakers regarding individual children is absent. Another problem in this approach is its complexity and potential cost. Not only are large numbers of measures employed in this strategy, they must be coordinated during their administration and interpreted after their aggregation. This costs money and requires expertise that may not be available in many communities. Nevertheless, the approach described here is an excellent design for beginning to understand the forces that result in different communities adopting very different profiles about readiness. This methodology answers the question of "Ready for what?"

Interactionist

This view holds that readiness is a relational, interactional construct reflecting a joint focus on the child's status and the characteristics of the educational setting. Readiness is not something we wait for, and it is not something we impose. It is not a within-the-child phenomenon, nor something specifically outside the child. Rather, it is the product of a set of educational decisions that are differentially shaped by the skills, experiences, and learning opportunities the child has had and the perspectives and goals of the community, classroom, and teacher.

When readiness is defined as an interaction, two conditions are critical for its assessment. First, there must be sustained opportunities for the interactions between teacher and child to occur, and second, these interactions must occur over time, rather than on a single occasion. These two conditions are obvious, but also represent a dramatic departure from conventional paradigms and from all three models presented above. The difference from previous conceptions of readiness lies in the joint focus on the child and educational environment and in the recognition of a temporal dimension to readiness assessment. This view does not hold that we can "round up" all of the kindergarten children in a community on a given day and test them to determine their readiness. Rather, it suggests that readiness can only be assessed over time and in context. Perhaps this is what Bruner really meant when he said that readiness is a "half truth."

In existence today is a methodology that can provide the type of readiness assessment that occurs over time and in interaction. Specifically, curriculum-embedded performance assessments can be viewed as means for helping teachers and children reach their potential in early childhood and early elementary classrooms. Performance assessment is useful because it is founded on the notion that learning and development can only be assessed over time and in interaction with materials, peers, and other people. Classrooms in which curriculum-embedded performance assessments (also known as "authentic performance assessments" [see Wiggins, 1989]) take place not only contain a joint focus on the child's status and the characteristics of the

child's educational setting, but also encourage individual planning, programming, and evaluation. These characteristics can be incorporated into the components of a curriculum-embedded performance assessment, much like those described for older students by Wolf and Reardon (1996) and by Darling-Hammond and Ancess (1996) or for children from preschool through fifth grade in the Work Sampling System (Meisels, 1997; Meisels, Jablon, Marsden, Dichtelmiller, & Dorfman, 1994). This latter approach offers an empirical test of the interactional definition of readiness. Relying on developmental guidelines and checklists, portfolios, and summary reports, it is based on using teachers' perceptions of their students in actual classroom situations while simultaneously informing, expanding, and structuring those perceptions. It involves students and parents in the learning and assessment process instead of relying on measures external to the community, classroom, and family context, and it makes possible a systematic documentation of what children are learning and how teachers are teaching. In short, the Work Sampling System draws attention to what the child brings to the learning situation and what the learning situation brings to the child. As active constructors of knowledge, children should be expected to analyze, synthesize, evaluate, and interpret facts and ideas. This approach to performance assessment allows teachers the opportunity to learn about these processes by documenting children's interactions with materials, adults, and peers in the classroom environment and using this documentation to evaluate children's achievements and plan future educational interventions. Evidence of the reliability and validity of Work Sampling with kindergarten children is available (Meisels, Liaw, Dorfman, & Nelson, 1995).

For this proposal to be successful, it must be implemented very cautiously. Only performance assessments that meet several critical criteria will actually help us reach our goals of assessing readiness interactionally. Following the suggestions of Calfee (1992), these criteria include the following: First, such assessments should be *integrative*, bringing together various skills into visible displays and demonstrations of behavior that occur during the context of instruction. In this paradigm we expect to see children construct models, solve problems, and prepare reports that call upon a range of skills, experiences, and knowledge. Second, these assessments should *emphasize top-level competence*. Unlike conventional group-administered norm-referenced tests, performance assessments ask children to show what they can do, and teachers are expected to work with their students to help them achieve their best possible work—work that reflects their special talents or interests.

Third, performance assessments should *encourage meta-cognition* and the capacity to articulate as well as reflect on performance. Through performance assessments, children are engaged in the learning process. They evaluate their own work, and reflect on their own progress, rather than being passive recipients of instruction or compliant occupants of the classroom. Finally, performance assessments are guided by *developmental standards*. These standards are embedded in the longitudinal character of children's work that is captured by the continuous progress format of curriculum-embedded performance assessments. These standards also emphasize the continuity of curricular development between children at different ages, grades, and levels of functioning.

This view represents a significant change in the expectations for readiness assessment. No longer can we hope to determine whether a child should be

enrolled in regular kindergarten based on a brief evaluation of core skills that should be achieved by all children or as a result of maturation. Rather, readiness is something to be demonstrated by children *in situ*, over time, and differentially when teachers are systematically prepared to observe, document, and evaluate it and to apply community-based standards that are established in relation to a nationally-validated understanding of curriculum domains, as exemplified by the Work Sampling System (Meisels, 1996). Readiness, it turns out, cannot be assessed easily, quickly, or efficiently.

The type of performance assessment described here as a readiness assessment is not adopted easily or without expense. It requires extensive professional development for teachers; changes in orientation regarding testing, grading, and student classification by educational policymakers; and alteration in expectations by parents and the community. Such changes entail financial burdens, need for centralized coordination and program evaluation, and long-term commitment from teachers, parents, and the community—all of which are potential obstacles to implementation.

Although these obstacles exist, this perspective is consistent with the most recent call to the field from the Goal 1 Technical Planning Group regarding the status of readiness testing:

> The Technical Planning Group, while understanding the complexity of the technical challenges associated with defining and assessing early development and learning . . . is convinced that new assessments are doomed to repeat past problems unless such efforts are permeated by a conceptual orientation that accommodates cultural and contextual variability in *what* is being measured and in *how* measurements are constructed. Within the broad parameters of standardization, then, flexibility and inventiveness must be brought to bear on the content and the process of assessment. (Kagan, Moore, & Bredekamp, 1995, p. 42)

The approach to assessing readiness from an interactional perspective using curriculum-embedded performance assessment meets this challenge.

Conclusion: Three Aphorisms Concerning the Assessment of Readiness

The readiness issue is thick with dilemmas. It calls for achievement testing before children reach school, but we know that we cannot make any common assumptions about conditions of learning before formal education begins. It implies an assumption of homogeneity and equity in opportunities before kindergarten, but it is clear that children come from heterogeneous backgrounds and are raised in dramatically different ways with access to very different personal and material resources. And it suggests that all children are being prepared for a similar educational program when the field of early education is marked by lack of uniformity and by vast differences in curriculum and methods.

The solution offered here cuts through these dilemmas by recognizing the heterogeneity in preparation, life experiences, and educational settings that children will have encountered by the time they enter school. The assessment methodology suggested above represents a common denominator of standards and methods to determine if and at what levels of accomplishment children have achieved these standards. Despite substantial use of this approach (see Meisels, 1997), the task of implementation is at least as challenging as the responsibility to use assessments fairly and appropriately with young children. Three aphorisms can be advanced to summarize my views on the issues facing readiness assessments and on how Goal 1 should be construed in light of this chapter's discussions. I list the aphorisms below and then discuss them briefly.

1. Testing is not a monolith.
2. High-stakes testing does not promote learning in early childhood.
3. Readiness assessment calls for a comprehensive view of learning and development.

Testing Is Not a Monolith

There are many different types of assessments and assessment purposes. No single assessment will satisfy all of our educational needs or solve all of our educational problems. One of the ways that we squander resources and place children at risk is by using assessments as a blunt instrument, in which one type of assessment is expected to perform the functions of others. The Committee on School Health and Committee on Early Childhood of the American Academy of Pediatrics (1995) made clear the dangers inherent in the inappropriate use of school readiness tests: "When instruments and procedures designed for screening are used for diagnostic purposes, or when tests are administered by individuals who have a limited perspective on the variations of normal development, or when staff with little formal training in test administration perform the screening, children can be wrongly identified and their education jeopardized" (p. 437). We must use assessments carefully and appropriately to resolve educational problems, rather than to create such problems.

This maxim cautions us to use assessments in the way that they were designed and intended. A wide range of purposes of assessments can be described that are appropriate for young children (see Meisels, 1994). Because we may need to fulfill a variety of assessment purposes, it is unjustified to assume that these purposes can be satisfied by one or two types of assessment instruments. But not all possible purposes are appropriate for young children or are consistent with the interactional purposes described earlier. For example, Kagan, Rosenkoetter, and Cohen (1997, p. 7) suggest that assessment for accountability (that is, measurement for the purpose of "informing the public about the collective status of children") is also suitable for young children. This can be disputed.

High-Stakes Testing Does Not Promote Learning in Early Childhood

Accountability issues nearly always raise the stakes of assessment so that poor scores on such examinations will result in negative sanctions of one sort or another. High-stakes testing refers to the use of assessment data to make decisions about enrollment, retention, promotion, incentives for children or teachers, or other tangible rewards or punishments (Madaus, 1988; Meisels, 1989). The evidence about the negative impact of these assessments on young children is very strong. In a study of 12 elementary schools in New York state across a period of increased use of high-stakes assessment accountability (1978-1989) Allington and McGill-Franzen (1992) found that retention and special education placements increased in the primary grades in step with an increase in accountability pressures. Studying elementary schools in Arizona, Smith (1991) found other negative effects of testing on teachers: "Testing programs substantially reduce the time available for instruction, narrow curricular offerings and modes of instruction, and potentially reduce the capacities of teachers to teach content and to use methods and materials that are incompatible with standardized testing formats" (p. 8).

As accountability pressures increase, not only do teachers and other educators react by resorting more frequently to retention and special education placements, but parents begin to take matters into their own hands. Recognizing the escalation of academic and accountability demands in the kindergarten as a perversion of the historic view of kindergartens as "gardens of children," parents in increasing numbers seek to protect their children from these demands by holding their children out from school until they are a year older than the standard entry age. "Holding out" refers to the practice whereby parents choose to delay their child's entry to kindergarten in order to give their child more time to "get ready" for the more highly charged educational setting in which their child will be enrolled. Data about the prevalence of holding out is difficult to obtain, but the Fast Response Survey of kindergarten teacher attitudes towards readiness (NCES, 1993) showed that 13% of the children in the classes taught by the respondents were six years old or more in *October* of their kindergarten year. This may have included some children who were retained in grade, but included here as well were certainly children whose parents decided to "red shirt" them, or hold them out for a year before kindergarten. Some researchers suggest that holding out reflects an assumption that students must be ready before they attend school. Bellisimo, Sacks, and Mergendoller (1995) note that "as expectations increase for what students must do to prove readiness, more children are deemed by their parents to be *not ready* for the demands of kindergarten" (p. 205). But the "bet" parents make about holding their children out of school for a year is not a very good wager. Research shows that chronological age is not nearly as powerful an influence on the developmental progress of children as schooling. Some studies have shown that the independent effects of schooling are four times greater than that of age (Bentin, Hammer, & Cahan, 1991), and that any advantage conferred by chronological age at entrance to first grade is lost within a few years (Bickel, Zigmond, & Strahorn, 1991).

Of great importance, recent data suggest that there are negative effects of being old for grade that may be associated with patterns of parental holding

out. In two studies, Byrd and his colleagues described increased behavior problems that they attributed to delayed school entry and delayed school progress. Their first study (Byrd, Weitzman, & Doniger, 1996) showed that students who were older than their same-grade peers were at increased risk of drug use when studied in adolescence, even when old-for-grade status was determined by third grade. This study did not distinguish between students who were retained in grade and those who were held out. However, in their second study (Byrd, Weitzman, & Auinger, 1997) they sought to determine whether higher rates of reported behavior problems were independent of retention in grade. Using data from 9,079 children ages 7 to 17 years who participated in the Child Health Supplement to the 1988 National Health Interview Study, they found that both grade retention and simply being old for grade were associated with increased rates of problematic behaviors, especially among adolescents. In disentangling delayed entry to school and retention they found what may be considered a latent adverse behavioral outcome resulting from delaying children's school entry (for a contrasting view based on a different methodology and a sample followed for a shorter period of time, see Zill & West, 1997). They conclude that the question "At what age should children start first grade?" may have a lifelong impact on a child. The accountability culture created in our schools is a major contributor to the initiation of unnecessary risks that may be very persistent.

Readiness Assessment Calls for a Comprehensive View of Learning and Development

One of the key issues in the readiness debate concerns on whom the burden of proof should lie. Should children be expected to be ready for schools, or should schools be expected to be ready for children? This way of formulating the problem is not very felicitous because it adopts a deficit orientation that is at odds with the entire enterprise of welcoming children into their first formal school experience. Some years ago the California School Readiness Task Force issued a report entitled, *Here they come: Ready or not!* (California State Department of Education, 1988). Their view of the inevitability of children entering school whether the schools or the children were well prepared rings true today.

Many informal conversations surrounding the first national goal seem to imply that lack of readiness is a problem to be eradicated. But actually, readiness is a process that occurs over time and is not complete by the first day of kindergarten. Thinking about eliminating it as a problem is simply not helpful. One of the themes debated among those who first met as part of the Goal 1 Resource Panel was whether readiness should be considered something that is demonstrated by kindergarten or by first grade. I, like many others, advocated for kindergarten; I was wrong. If readiness is a process, and if schools are by necessity a major contributor to this process, then a period of common schooling needs to occur in which this process can take place.

We must begin to think of readiness as much more than knowledge of a few skills that are seen in the first few weeks of kindergarten or behavior patterns that are consistent with those of compliant children who have prodigiously long attention spans. Pianta and Walsh (1996), adopting what can be called an "input" view of readiness, say that children are ready for school

when, "for a period of several years, they have been exposed to consistent, stable adults who are emotionally invested in them; to a physical environment. that is safe and predictable; to regular routines and rhythms of activity; to competent peers, and to materials that stimulate their exploration and enjoyment of the object world and from which they derive a sense of mastery" (p. 34). This list of precursors of readiness can be expanded and refined. In their monograph entitled *Heart Start: The emotional foundations of school readiness*, Zero to Three: The National Center for Infants, Toddlers, and Families (1992), discusses the characteristics that enable children to come to school with a knowledge of how to learn. These characteristics include confidence, curiosity, intentionality, self-control, relatedness, capacity to communicate, and cooperativeness (p. 7). Some of these characteristics are incorporated into the dimension of "approaches to learning" that is part of the proposed assessment of readiness suggested by the Goals Panel. But beyond this, these qualities suggest a way of raising and caring for children throughout their first years of life that does not reflect a sole preoccupation with establishing a fund of general knowledge, an ability to read or recite the alphabet, familiarity with numbers or colors, or skills of hopping, balancing, or skipping. Fundamental to the attainment of *these* readiness skills is a sense of self that can only be developed over time and in interaction with trustworthy and caring adults.

Modifying the readiness goal to accommodate these ideas is not difficult. Readiness must be conceptualized as a broad construct that incorporates all aspects of a child's life that contribute directly to that child's ability to learn. Definitions of readiness must take into account the setting, context, and conditions under which the child acquires skills and is encouraged to learn. Assessments of readiness must, in consequence, incorporate data collected over time from the child, teacher, parents, and community. In short, these thoughts help us restate the first national goal as follows:

> By the year 2000 all children will have an opportunity to enhance their skills, knowledge, and abilities by participating in classrooms that are sensitive to community values, recognize individual differences, reinforce and extend children's strengths, and assist them in overcoming their difficulties.

Readiness need no longer be a mystery or a set of confusing constructs. Now that systematic models of performance assessment have been developed, assessing readiness also need not be a source of frustration. In perceiving the basic relativity inherent in children's preparation for school, and in recognizing the remarkable power to build from children's strengths in addressing their areas of difficulty, this restatement of Goal 1 captures the spirit of what we all want for all children at the outset of school—an opportunity to take the first steps towards school success.

References

Allington, R. L., & McGill-Franzen, A. (1992). Unintended effects of educational reform in New York. *Educational Policy, 6*, 397-414.

Barth, P., & Mitchell, R. (1992). *Smart start: Elementary education for the 21st century*. Golden, CO: North American Press.

Bellisimo, Y., Sacks, C. H., & Mergendoller, J. R. (1995). Changes over time in kindergarten holding out: Parent and school contexts. *Early Childhood Research Quarterly, 10*, 205-222.

Bentin, S., Hammer, R., & Cahan, S. (1991). The effects of aging and first grade schooling on the development of phonological awareness. *Psychological Science, 2*, 271-274.

Bickel, D. D., Zigmond, N., & Strahorn, J. (1991). Chronological age at entrance to first grade: Effects on elementary school success. *Early Childhood Research Quarterly, 6*, 105-117.

Bredekamp, S., & Shepard, L. A. (1989). How best to protect children from inappropriate school expectations, practices, and policies. *Young Children, 44*, 14-24.

Boyer, E. L. (1991). *Ready to learn: A mandate for the nation*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

Brigance, A. H. (1982). Brigance K and 1 screen for kindergarten and first grade. North Billerica, MA: Curriculum Associates, Inc.

Browning, K. (1997). *Michigan public preschool teachers' views on risk status and readiness for kindergarten*. Dissertation submitted to the University of Michigan, Ann Arbor.

Bruner, J. S. (1966). *Towards a theory of instruction*. Cambridge, MA: Harvard University Press.

Byrd, R. S., Weitzman, M., & Auinger, P. (1997). Increased behavior problems associated with delayed school entry and delayed school progress. *Pediatrics, 100*, 654-661.

Byrd, R. S., Weitzman, M., & Doniger, A. S. (1996). Increased drug use among old-for-grade adolescents. *Archives of Pediatrics & Adolescent Medicine, 150*, 470-476.

Calfee, R. (1992). Authentic assessment of reading and writing in the elementary classroom. In M. J. Dreher & W. H. Slater (Eds.), *Elementary school literacy: Critical issues* (pp. 211-226). Norwood, MA: Christopher-Gordon.

California State Department of Education (1988). *Here they come: Ready or not!* (Report of the School Readiness Task Force). Sacramento, CA: Author.

Committee on School Health and Committee on Early Childhood of the American Academy of Pediatrics. (1995). The inappropriate use of school "readiness" tests. *Pediatrics, 95*, 437-438.

Cuban, L. (1992). Why some reforms last: The case of the kindergarten. *American Journal of Education, 100*, 166-194.

Darling-Hammond, L., & Ancess, J. (1996). Authentic assessment and school development. In J.B. Baron & D.P. Wolf (Eds.), *Performance-based student assessment: Challenges and possibilities. Ninety-fifth yearbook of the National Society for the Study of Education, Part 1* (pp. 52-83). Chicago: University of Chicago Press.

Ellwein, M. C., Walsh, D. J., Eads, G. M., & Miller, A. (1991). Using readiness tests to route kindergarten students: The snarled intersection of psychometrics, policy, and practice. *Educational Evaluation and Policy Analysis, 13*, 159-175.

Fischer, K. W., & Silvern, L. (1985). Stages and individual differences in cognitive development. In M.R. Rosenzweig & L.W. Porter (Eds.), *Annual review of psychology, Vol. 36* (pp. 613-648). Palo Alto, CA: Annual Reviews.

Frisbie, D. A., & Andrews, K. (1990). Kindergarten pupil and teacher behavior during standardized achievement testing. *Elementary School Journal, 90*, 435-448.

Gagne, R. M. (1970). *The conditions of learning* (2nd ed.). New York: Holt, Rinehart, & Winston.

Gesell, A., & Amatruda, C.S. (1941). *Developmental diagnosis*. New York: Hoeber.

Glascoe, F. P. (1997). *Technical report for the Brigance Screens*. Billerica, MA: Curriculum Associates, Inc.

Graue, M. E. (1992). Social interpretations of readiness for kindergarten. *Early Childhood Research Quarterly, 7*, 225-243.

Graue, M. E. (1993). *Ready for what? Constructing meanings of readiness for kindergarten*. Albany, NY: State University of New York Press.

Graue, M. E., & Shepard, L. A. (1989). Predictive validity of the Gesell School Readiness Tests. *Early Childhood Research Quarterly, 4*, 303-315.

Haines, J., Ames, L. B., & Gillespie, C. (1980). *The Gesell preschool test manual*. Lumberville, PA: Modern Learning Press.

Ilg, F., & Ames, L. B. (1972). *School readiness*. New York: Harper & Row.

Kagan, S.L. (1990). Readiness 2000: Rethinking rhetoric and responsibility. *Phi Delta Kappan, 72*, 272-279.

Kagan, S. L., Moore, E., & Bredekamp, S. (1995). *Reconsidering children's early development and learning: Toward common views and vocabulary*. Washington, DC: National Education Goals Panel.

Kagan, S. L., Rosenkoetter, S., & Cohen, N. E. (1997). *Considering child-based results for young children: Definitions, desirability, feasibility, and next steps*. New Haven, CT: Yale Bush Center in Child Development and Social Policy.

Kohlberg, L., & Mayer, R. (1972). Development as the aim of education. *Harvard Educational Review, 42*, 429-496.

Koretz, D. (1988). Arriving in Lake Wobegon: Are standardized tests exaggerating achievement and distorting instruction? *American Educator, 12*, 8-15; 46-52.

Lichtenstein, R. (1990). Psychometric characteristics and appropriate use of the Gesell School Readiness Screening Test. *Early Childhood Research Quarterly, 5*, 359-378.

Lopez, M. E., & Hochberg, M. R. (1993). *Paths to school readiness: An in-depth look at three early childhood programs*. Cambridge, MA: Harvard Family Research Project.

Love, J. M. (1995). *Conception of readiness for ECLS and HSLS*. Unpublished memorandum. Princeton, NJ: Mathematica Policy Research, Inc.

Love, J. M., Aber, J. A., & Brooks-Gunn, J. (1994). *Strategies for assessing community progress toward achieving the first national educational goal*. Princeton, NJ: Mathematica Policy Research, Inc.

Madaus, G. F. (1988). The influence of testing on the curriculum. In L.N. Tanner (Ed.), *Critical issues in curriculum: Eighty-seventh yearbook of the National Society for the Study of Education* (pp. 83-121). Chicago: University of Chicago Press.

Meisels, S. J. (1987). Uses and abuses of developmental screening and school readiness testing. *Young Children, 42*, 4-6; 68-73.

Meisels, S. J. (1989). High stakes testing in kindergarten. *Educational Leadership, 46*, 16-22.

Meisels, S. J. (1992a). Doing harm by doing good: Iatrogenic effects of early childhood enrollment and promotion policies. *Early Childhood Research Quarterly, 7*, 155-174.

Meisels, S. J. (1992b). The Lake Wobegon effect reversed: Commentary on "The Gesell assessment: psychometric properties." *Early Childhood Research Quarterly, 7*, 45-46.

Meisels, S. J. (1994). Designing meaningful measurements for early childhood. In B. L. Mallory & R. S. New (Eds.), *Diversity in early childhood education: A call for more inclusive theory, practice, and policy* (pp. 205-225). New York: Teachers College Press.

Meisels, S. J. (1995). Out of the readiness maze. *Momentum, 26*, 18-22.

Meisels, S. J. (1996). Performance in context: Assessing children's achievement at the outset of school. In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 410-431). Chicago: University of Chicago Press.

Meisels, S. J. (1997). Using Work Sampling in authentic performance assessments. *Educational Leadership, 54*, 60-65.

Meisels, S. J., with Atkins-Burnett, S. (1994). *Developmental screening in early childhood: A guide* (4th ed.). Washington, DC: National Association for the Education of Young Children.

Meisels, S. J., Henderson, L. W., Liaw, F., Browning, K., & Ten Have, T. (1993). New evidence for the effectiveness of the Early Screening Inventory. *Early Childhood Research Quarterly, 8*, 327-346.

Meisels, S. J., Jablon, J. R., Marsden, D. B., Dichtelmiller, M. L., & Dorfman, A. B. (1994). *The Work Sampling system*. Ann Arbor, MI: Rebus Inc.

Meisels, S. J., Liaw, F. R., Dorfman, A. B., & Nelson, R. (1995). The Work Sampling system: Reliability and validity of a performance assessment for young children. *Early Childhood Research Quarterly, 10*, (3), 277-296.

Meisels, S. J., Marsden, D. B., Wiske, M. S., & Henderson, L. W. (1997). *The Early Screening Inventory-Revised* (ESI-R). Ann Arbor, MI: Rebus Inc.

Meisels, S. J. & Provence, S. (1989). *Screening and assessment: Guidelines for identifying young disabled and developmentally vulnerable children and their families*. Washington, DC: National Center for Clinical Infant Programs.

National Association for the Education of Young Children. (1988). NAEYC position statement on standardized testing of young children 3 through 8 years of age. *Young Children, 43*, 42-47.

National Association for the Education of Young Children. (1990). NAEYC position statement on school readiness. *Young Children, 46*, 21-23.

National Association of Early Childhood Specialists in State Departments of Education. (1987). *Unacceptable trends in kindergarten entry and placement*. Springfield, IL: Author.

National Association of Elementary School Principals. (1990). *Early childhood education: Standards for quality programs for young children*. Alexandria, VA: Author.

National Association of State Boards of Education. (1988). *Right from the start*. Report of the National Task Force on School Readiness. Alexandria, VA: Author.

National Association of State Boards of Education. (1991). *Caring communities: Supporting young children and families*. Report of the NASBE Task Force on Early Childhood Education. Alexandria, VA: Author.

National Center for Education Statistics. (1993). *Public school kindergarten teachers' views on children's readiness for school*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

National Commission on Children. (1992). *Beyond rhetoric: A new American agenda for children and families*. Washington, DC: Author.

National Commission on Excellence in Education. (1983). *A nation at risk*. Washington, DC: U.S. Department of Education.

National Education Goals Panel. (1991). *The national education goals report*. Washington, DC: Author.

Nelson, R. F. (1997). *Kindergarten teachers' beliefs about school readiness*. Dissertation submitted to the University of Michigan, Ann Arbor.

Phillips, N. H. (1992). Two-tiered kindergarten: Effective for at-risk 5-year-olds? *Early Childhood Research Quarterly, 7*, 205–224.

Pianta, R. C., & Walsh, D. J. (1996). *High-risk children in schools: Constructing sustaining relationships*. New York: Routledge.

Powell, D. R. (1995). *Enabling young children to succeed in school*. Washington, DC: American Educational Research Association.

Robinson, J. H., & Kovacevich, D. A. (1984). The Brigance inventories. In D. J. Keyser & R. C. Sweetland (Eds.), *Test critiques, Vol. 1*. Kansas City, MO: Test Corporation of America.

Schorr, L. B. (1997). Judging interventions by their results. In S. L. Kagan, S. Rosenkoetter, & N. E. Cohen (Eds.), *Considering child-based results for young children: Definitions, desirability, feasibility, and next steps* (pp. 36–47). New Haven, CT: Yale Bush Center in Child Development and Social Policy.

Shepard, L. A. & Smith, M. L. (1986). Synthesis of research on school readiness and kindergarten retention. *Educational Leadership, 44*, 78–86.

Skinner, B. F. (1968). *The technology of teaching*. New York: Appleton-Century-Crofts.

Smith, M. L. (1991). Put to the test: The effects of external testing on teachers. *Educational Researcher*, 8–11.

Smith, M. L. & Shepard, L. A. (1988). Kindergarten readiness and retention: A qualitative study of teachers' beliefs and practices. *American Educational Research Journal, 25*, 307–333.

Stallman, A. C., & Pearson, P. D. (1990). Formal measures of early literacy. In L. M. Morrow & J. K. Smith (Eds.), *Assessment for instruction in early literacy* (pp. 7–44). Englewood Cliffs, NJ: Prentice Hall.

State of Michigan. (1987). Attorney General Opinion No. 6467, *Right of child to attend kindergarten*. Lansing, MI: Author.

Tyler, F. (1964). Issues related to readiness to learn. In E. Hilgard (Ed.), *Theories of learning and instruction: The sixty-third yearbook of the National Society for the Study of Education, Part 1* (pp. 210–239). Chicago: University of Chicago Press.

U.S. Department of Education. (1991). *America 2000: An education strategy*. Washington, DC: Author.

Walker, R. N. (1992). The Gesell Assessment: Psychometric properties. *Early Childhood Research Quarterly, 7*, 21–43.

White, S. H. (1996). The child's entry into the "age of reason". In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift: The age of reason and responsibility* (pp. 17-32). Chicago: University of Chicago Press.

Wiggins, G. (1989). A true test: Toward more authentic and equitable assessment. *Phi Delta Kappan, 70*, 703-713.

Willer, B., & Bredekamp, S. (1990). Redefining readiness: An essential requisite for educational reform. *Young Children, 45*, 22-24.

Wolf, D. P., & Reardon, S. (1996). Access to excellence through new forms of student assessment. In J. B. Baron & D. P. Wolf (Eds.), *Performance-based student assessment: Challenges and possibilities. Ninety-fifth yearbook of the National Society for the Study of Education, Part 1* (pp. 1-31). Chicago: University of Chicago Press.

Zero to Three: The National Center for Infants, Toddlers, and Families. (1992). *Heart start: The emotional foundations of school readiness*. Washington, DC: Author.

Zill, N., & West, J. (1997). *The elementary school performance and adjustment of children who enter kindergarten late or repeat kindergarten: Findings from national surveys*. Washington, DC: National Center for Education Statistics.

About CIERA

The Center for the Improvement of Early Reading Achievement (CIERA) is the national center for research on early reading and represents a consortium of educators in five universities (University of Michigan, University of Virginia, and Michigan State University, with University of Southern California and University of Minnesota), teacher educators, teachers, publishers of texts, tests, and technology, professional organizations, and schools and school districts across the United States. CIERA is supported under the Educational Research and Development Centers Program, PR/Award Number R305R70004, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.

Mission. CIERA's mission is to improve the reading achievement of America's children by generating and disseminating theoretical, empirical, and practical solutions to persistent problems in the learning and teaching of beginning reading.

CIERA Research Model

The model that underlies CIERA's efforts acknowledges many influences on children's reading acquisition. The multiple influences on children's early reading acquisition can be represented in three successive layers, each yielding an area of inquiry of the CIERA scope of work. These three areas of inquiry each present a set of persistent problems in the learning and teaching of beginning reading:

CIERA INQUIRY 1
Readers and Texts

Characteristics of readers and texts and their relationship to early reading achievement. What are the characteristics of readers and texts that have the greatest influence on early success in reading? How can children's existing knowledge and classroom environments enhance the factors that make for success?

CIERA INQUIRY 2
Home and School

Home and school effects on early reading achievment. How do the contexts of homes, communities, classrooms, and schools support high levels of reading achievement among primary-level children? How can these contexts be enhanced to ensure high levels of reading achievement for all children?

CIERA INQUIRY 3
Policy and Profession

Policy and professional effects on early reading achievement. How can new teachers be initiated into the profession and experienced teachers be provided with the knowledge and dispositions to teach young children to read well? How do policies at all levels support or detract from providing all children with access to high levels of reading instruction?

www.ciera.org

CIERA
Center for the Improvement of Early Reading Achievement

CIERA is a collaboration of
University of Michigan
University of Virginia
Michigan State University

with
University of Minnesota
University of Southern California

University of Michigan School of Education
610 E University Av, Rm 1600 SEB
Ann Arbor, MI 48109-1259

734.647.6940 voice
734.763.1229 fax
ciera@umich.edu

www.ciera.org